FIG.1

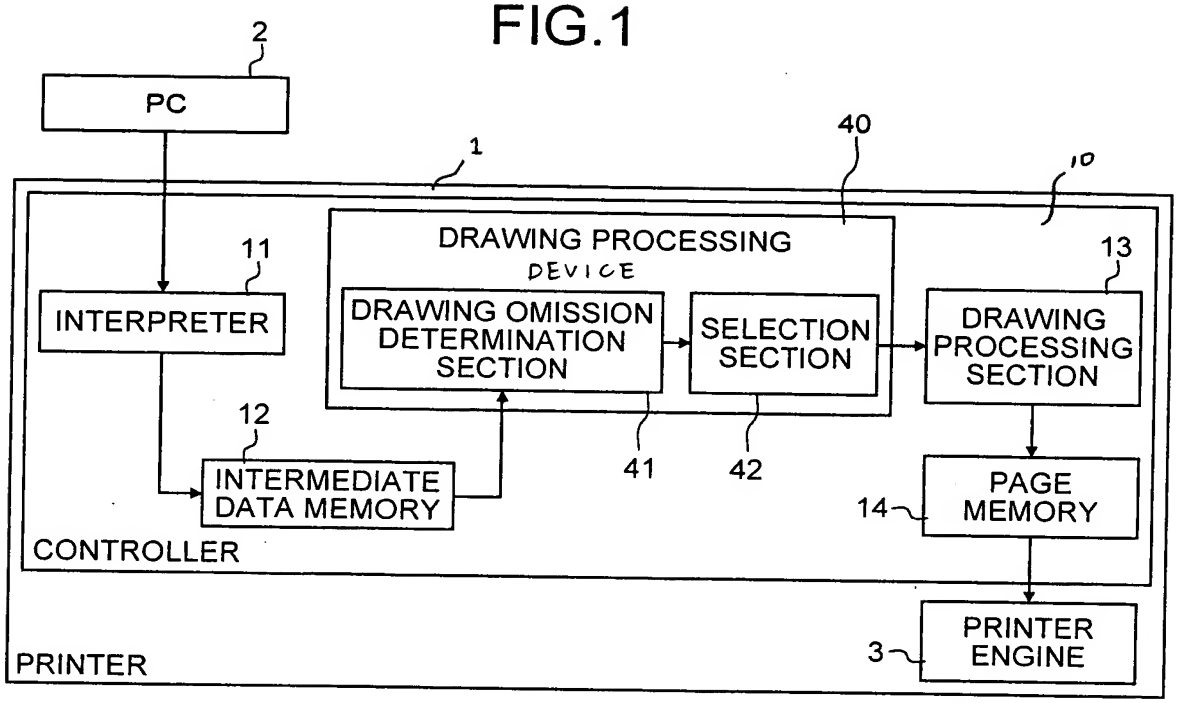

2
PC
1
40
10
11
INTERPRETER
DRAWING PROCESSING DEVICE
DRAWING OMISSION DETERMINATION SECTION
SELECTION SECTION
13
DRAWING PROCESSING SECTION
12
INTERMEDIATE DATA MEMORY
41
42
14
PAGE MEMORY
CONTROLLER
3
PRINTER ENGINE
PRINTER

FIG.2

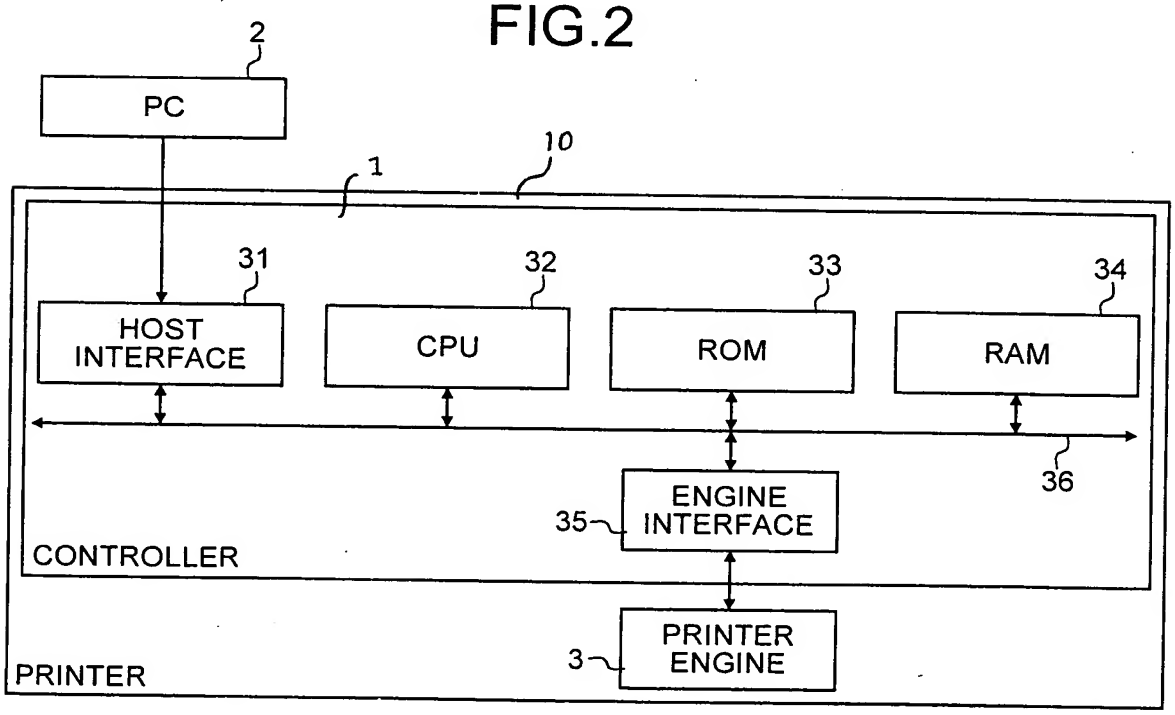

2
PC
1
10
31
HOST INTERFACE
32
CPU
33
ROM
34
RAM
36
35
ENGINE INTERFACE
CONTROLLER
3
PRINTER ENGINE
PRINTER

FIG.3

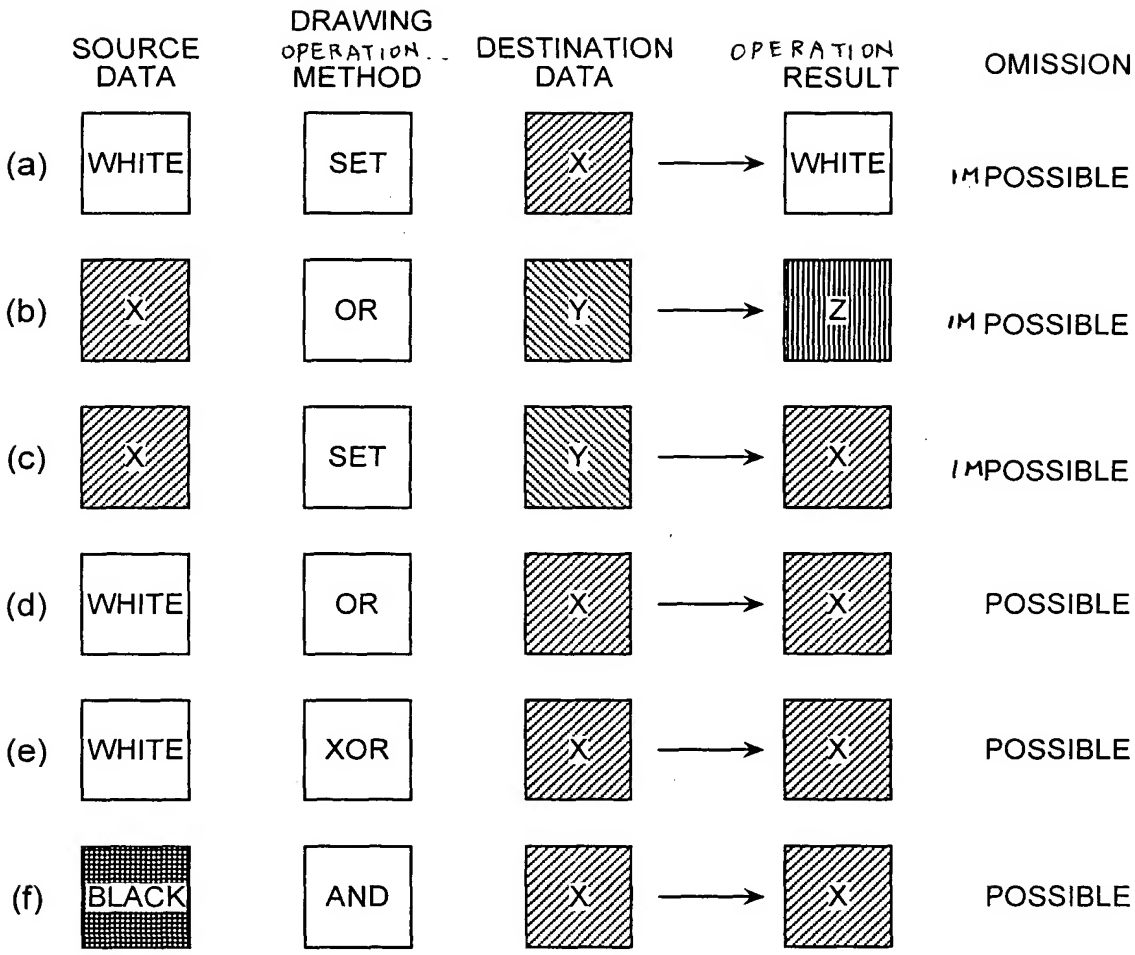

SOURCE DATA
DRAWING OPERATION METHOD
DESTINATION DATA
OPERATION RESULT
OMISSION
(a)
WHITE
SET
X
WHITE
IMPOSSIBLE
(b)
X
OR
Y
Z
IMPOSSIBLE
(c)
X
SET
Y
X
IMPOSSIBLE
(d)
WHITE
OR
X
X
POSSIBLE
(e)
WHITE
XOR
X
X
POSSIBLE
(f)
BLACK
AND
X
X
POSSIBLE

FIG.4

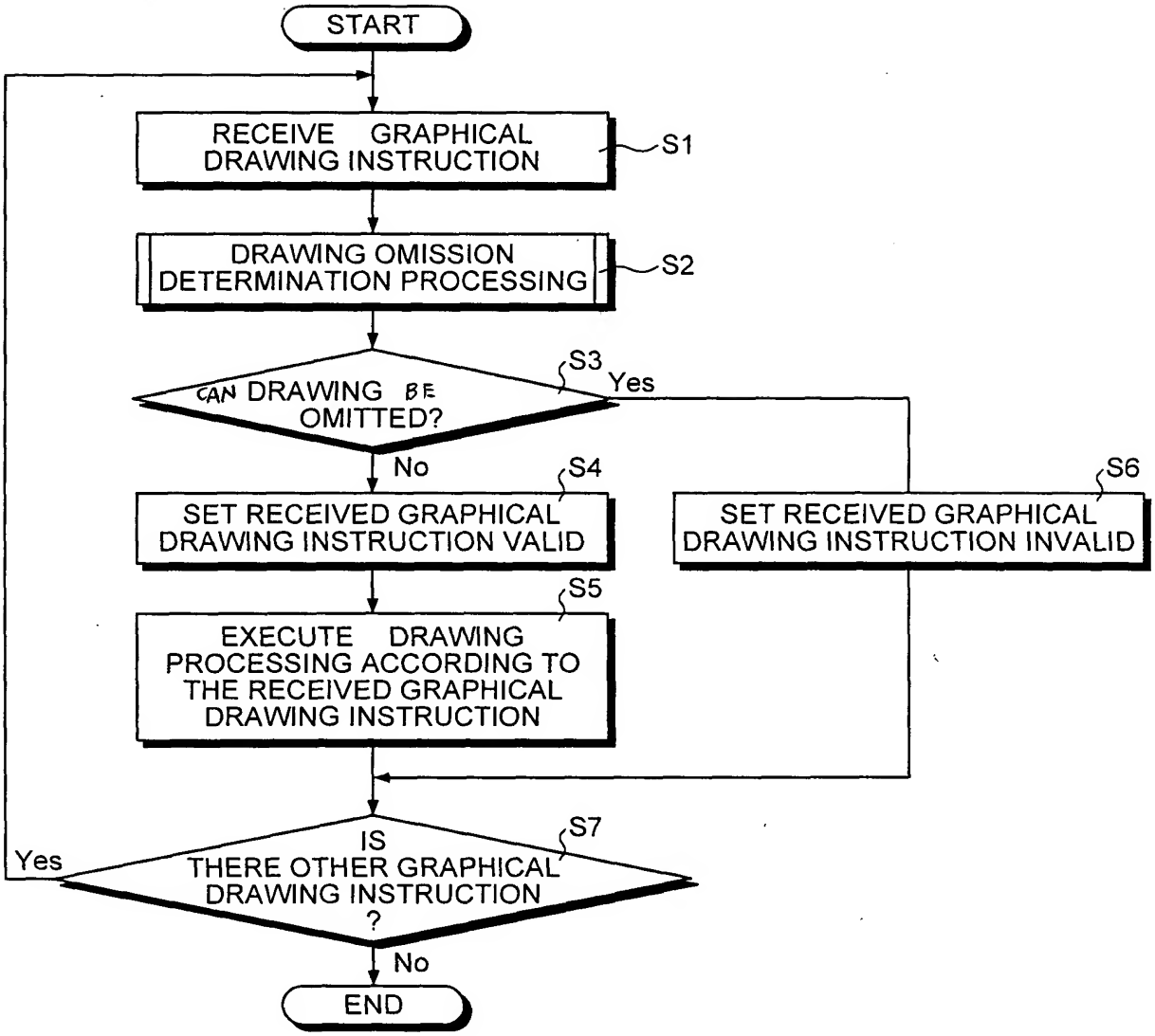

START
RECEIVE GRAPHICAL DRAWING INSTRUCTION
S1
DRAWING OMISSION DETERMINATION PROCESSING
S2
CAN DRAWING BE OMITTED?
S3
Yes
No
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION VALID
S4
EXECUTE DRAWING PROCESSING ACCORDING TO THE RECEIVED GRAPHICAL DRAWING INSTRUCTION
S5
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION INVALID
S6
IS THERE OTHER GRAPHICAL DRAWING INSTRUCTION ?
S7
Yes
No
END

FIG.5

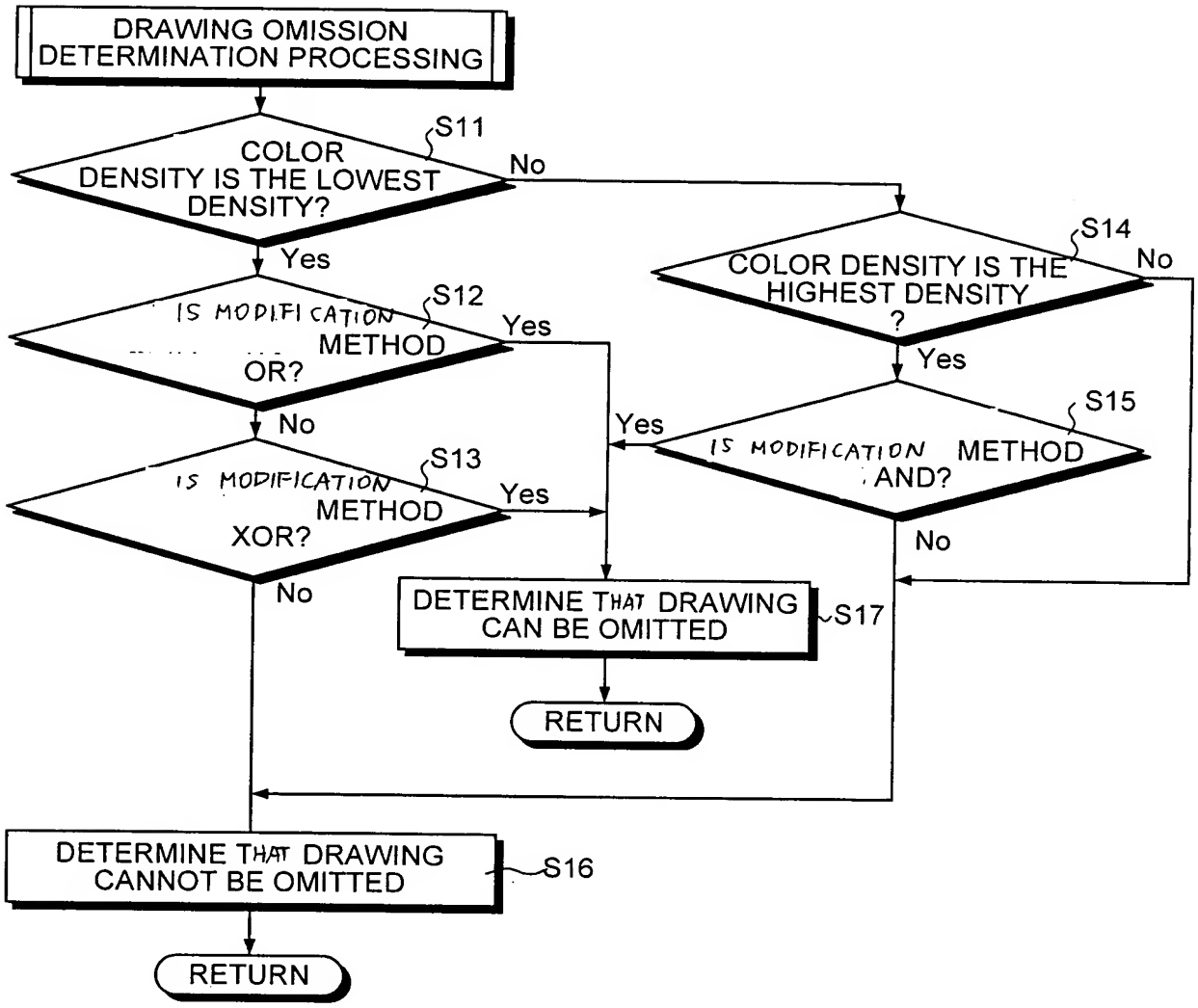

DRAWING OMISSION DETERMINATION PROCESSING
S11
COLOR DENSITY IS THE LOWEST DENSITY?
No
Yes
S12
IS MODIFICATION METHOD OR?
Yes
No
S13
IS MODIFICATION METHOD XOR?
Yes
No
S14
COLOR DENSITY IS THE HIGHEST DENSITY ?
No
Yes
S15
IS MODIFICATION METHOD AND?
Yes
No
DETERMINE THAT DRAWING CAN BE OMITTED
S17
RETURN
DETERMINE THAT DRAWING CANNOT BE OMITTED
S16
RETURN

FIG.6

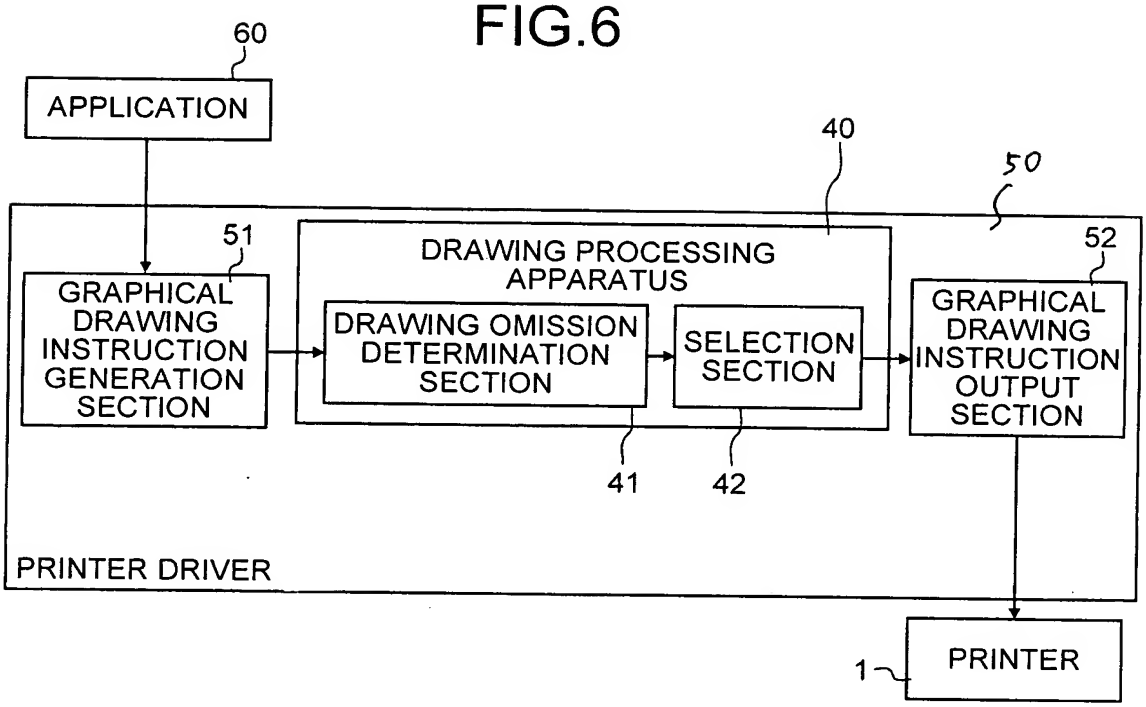

60
APPLICATION
40
50
51
52
GRAPHICAL DRAWING INSTRUCTION GENERATION SECTION
DRAWING PROCESSING APPARATUS
DRAWING OMISSION DETERMINATION SECTION
SELECTION SECTION
GRAPHICAL DRAWING INSTRUCTION OUTPUT SECTION
41
42
PRINTER DRIVER
1
PRINTER

FIG.7

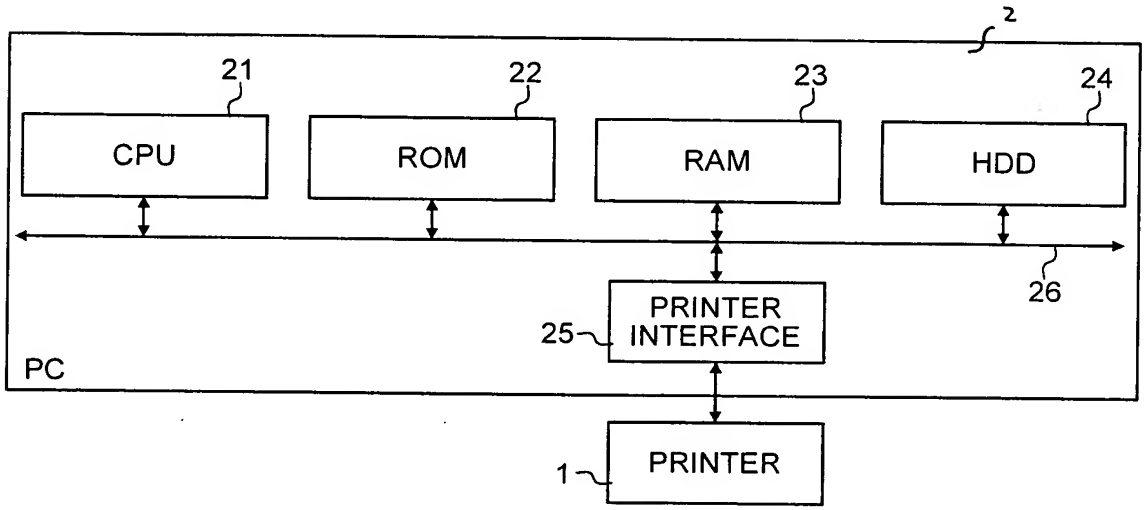

2
21
22
23
24
CPU
ROM
RAM
HDD
26
25
PRINTER INTERFACE
PC
1
PRINTER

FIG.8

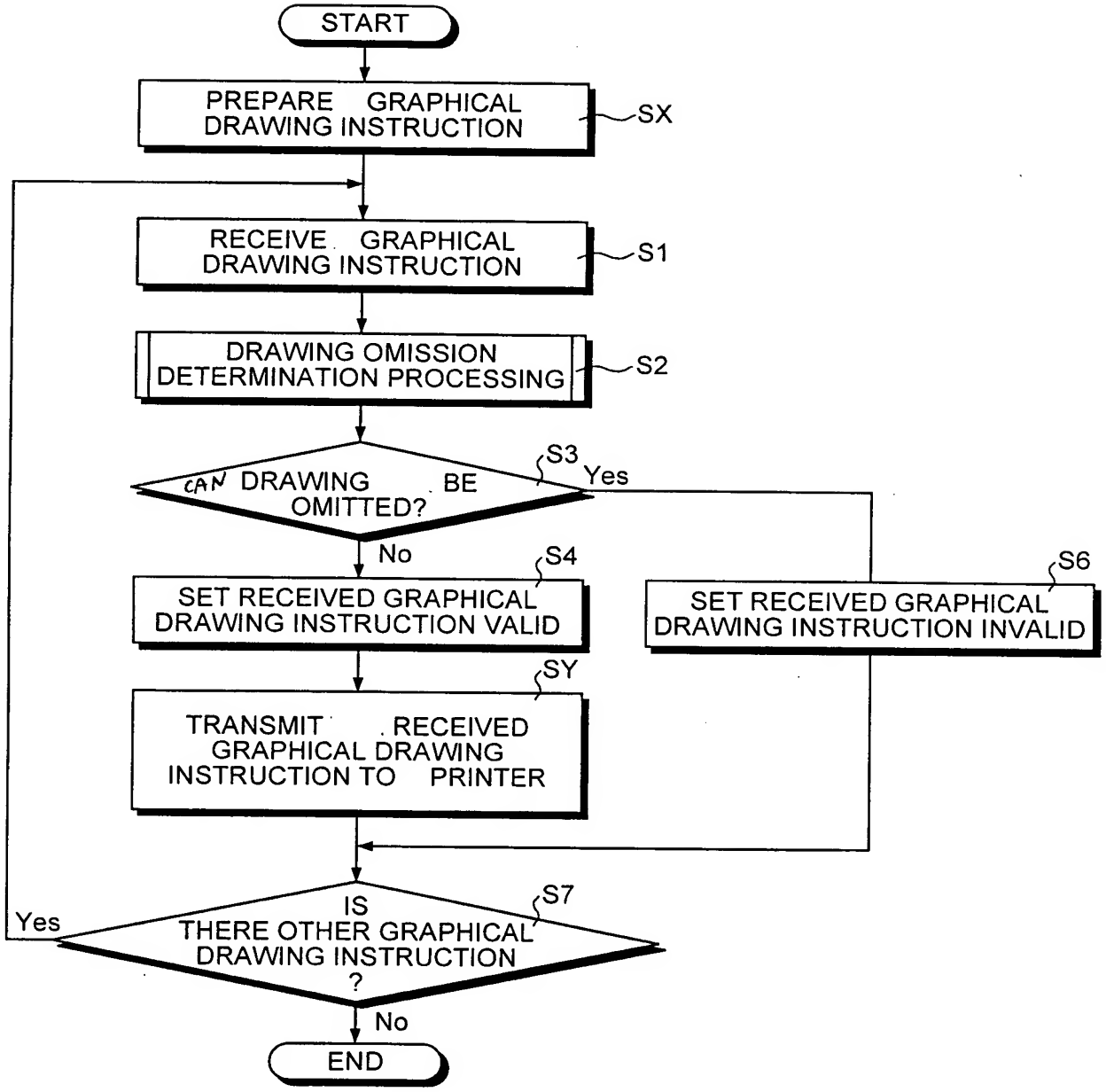

START
PREPARE GRAPHICAL DRAWING INSTRUCTION
SX
RECEIVE GRAPHICAL DRAWING INSTRUCTION
S1
DRAWING OMISSION DETERMINATION PROCESSING
S2
CAN DRAWING BE OMITTED?
S3
Yes
No
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION VALID
S4
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION INVALID
S6
SY
TRANSMIT RECEIVED GRAPHICAL DRAWING INSTRUCTION TO PRINTER
IS THERE OTHER GRAPHICAL DRAWING INSTRUCTION ?
S7
Yes
No
END

FIG.9

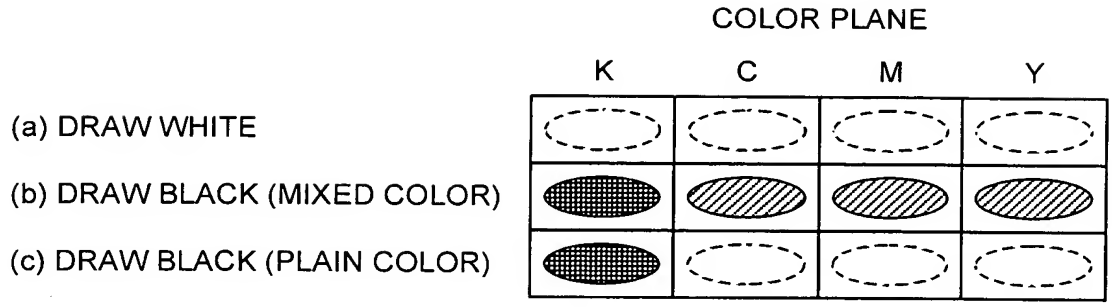

COLOR PLANE
K
C
M
Y
(a) DRAW WHITE
(b) DRAW BLACK (MIXED COLOR)
(c) DRAW BLACK (PLAIN COLOR)

FIG.10

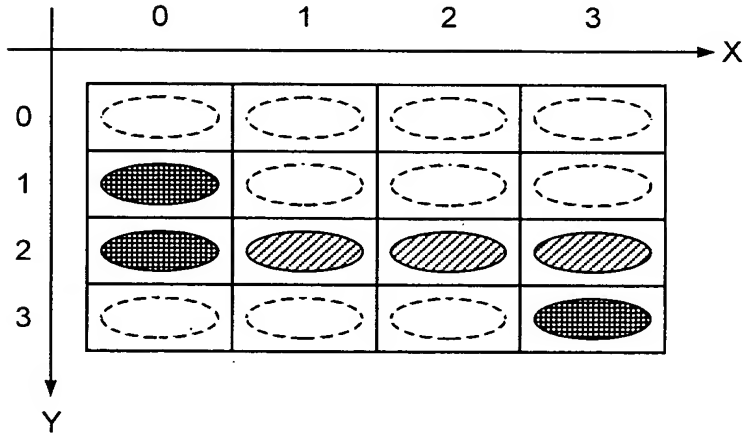

0
1
2
3
X
0
1
2
3
Y

FIG.11

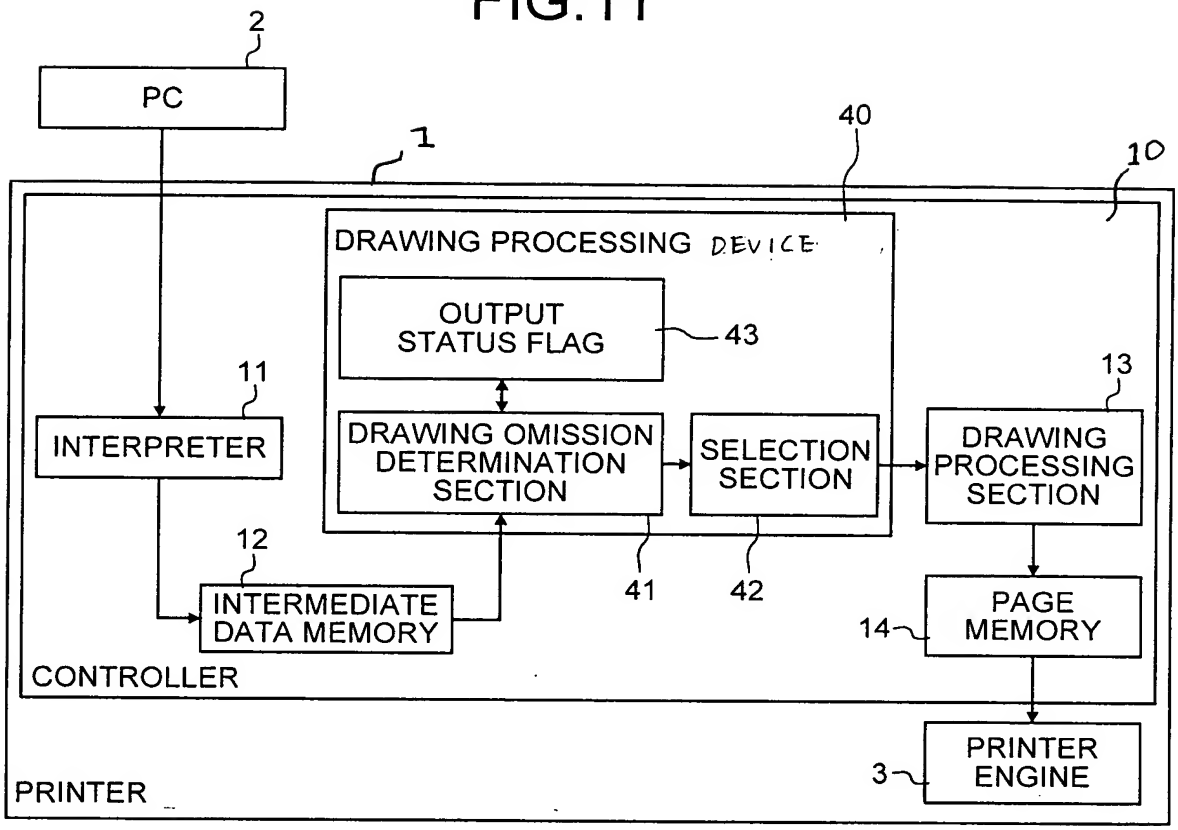

2
PC
1
40
10
DRAWING PROCESSING DEVICE
OUTPUT STATUS FLAG
43
11
INTERPRETER
DRAWING OMISSION DETERMINATION SECTION
SELECTION SECTION
13
DRAWING PROCESSING SECTION
12
INTERMEDIATE DATA MEMORY
41
42
14
PAGE MEMORY
CONTROLLER
3
PRINTER ENGINE
PRINTER

FIG.12

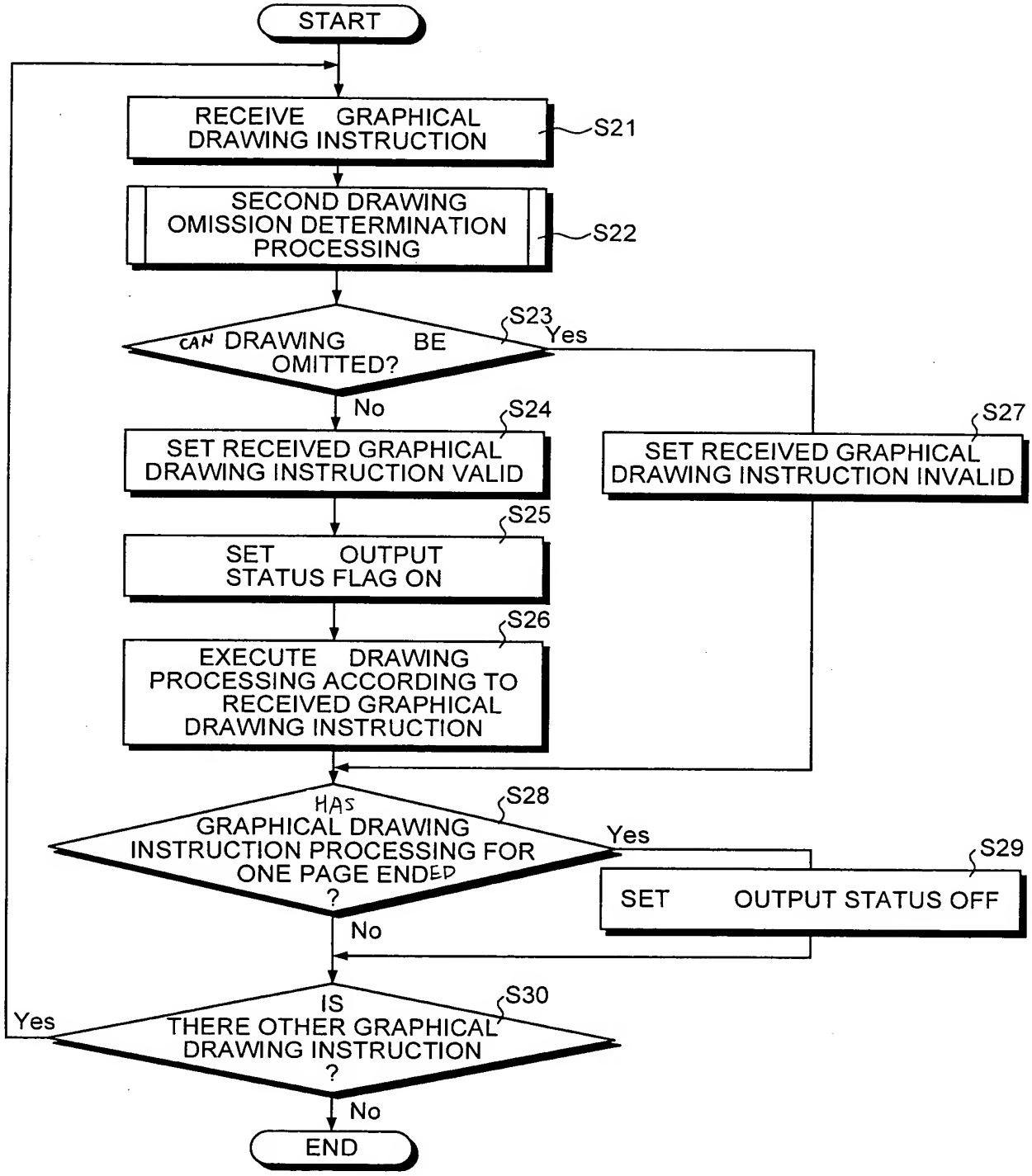

START
RECEIVE GRAPHICAL DRAWING INSTRUCTION
S21
SECOND DRAWING OMISSION DETERMINATION PROCESSING
S22
CAN DRAWING BE OMITTED?
S23
Yes
No
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION VALID
S24
SET OUTPUT STATUS FLAG ON
S25
EXECUTE DRAWING PROCESSING ACCORDING TO RECEIVED GRAPHICAL DRAWING INSTRUCTION
S26
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION INVALID
S27
HAS GRAPHICAL DRAWING INSTRUCTION PROCESSING FOR ONE PAGE ENDED ?
S28
Yes
No
SET OUTPUT STATUS OFF
S29
IS THERE OTHER GRAPHICAL DRAWING INSTRUCTION ?
S30
Yes
No
END

FIG.13

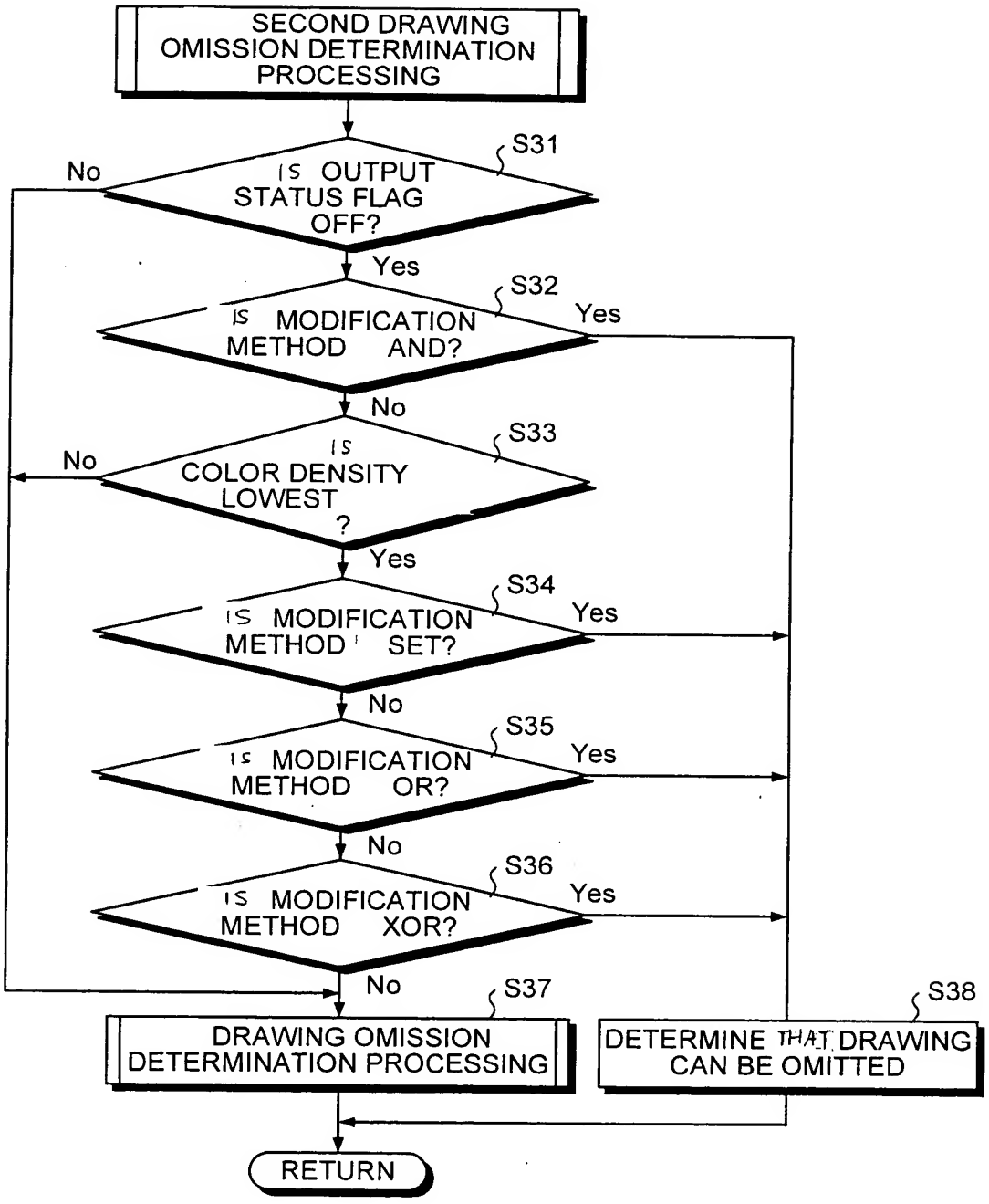

SECOND DRAWING OMISSION DETERMINATION PROCESSING
S31
IS OUTPUT STATUS FLAG OFF?
No
Yes
S32
IS MODIFICATION METHOD AND?
Yes
No
S33
IS COLOR DENSITY LOWEST ?
No
Yes
S34
IS MODIFICATION METHOD SET?
Yes
No
S35
IS MODIFICATION METHOD OR?
Yes
No
S36
IS MODIFICATION METHOD XOR?
Yes
No
S37
DRAWING OMISSION DETERMINATION PROCESSING
S38
DETERMINE THAT DRAWING CAN BE OMITTED
RETURN

FIG.14

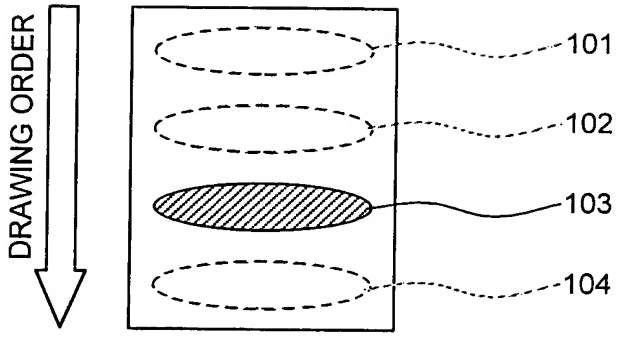

DRAWING ORDER
101
102
103
104

FIG.15

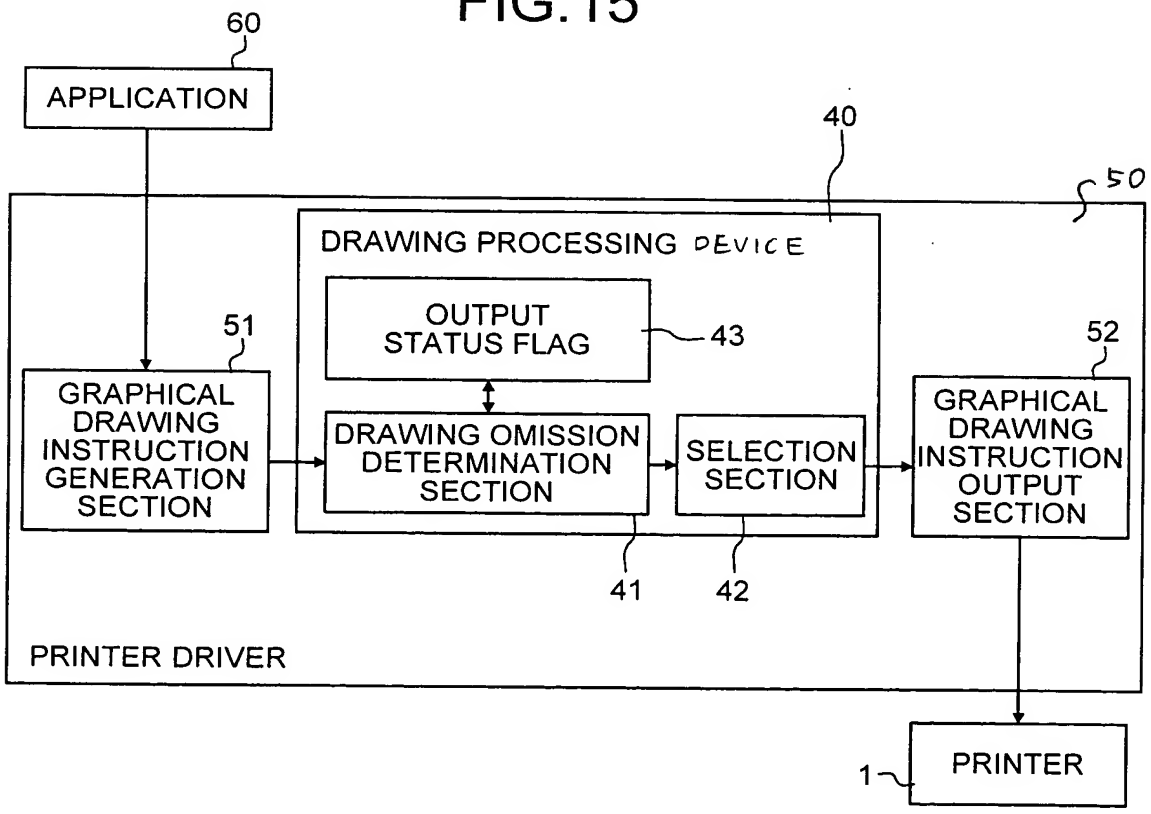

60
APPLICATION
40
50
DRAWING PROCESSING DEVICE
OUTPUT STATUS FLAG
43
51
52
GRAPHICAL DRAWING INSTRUCTION GENERATION SECTION
DRAWING OMISSION DETERMINATION SECTION
SELECTION SECTION
GRAPHICAL DRAWING INSTRUCTION OUTPUT SECTION
41
42
PRINTER DRIVER
1
PRINTER

FIG.16

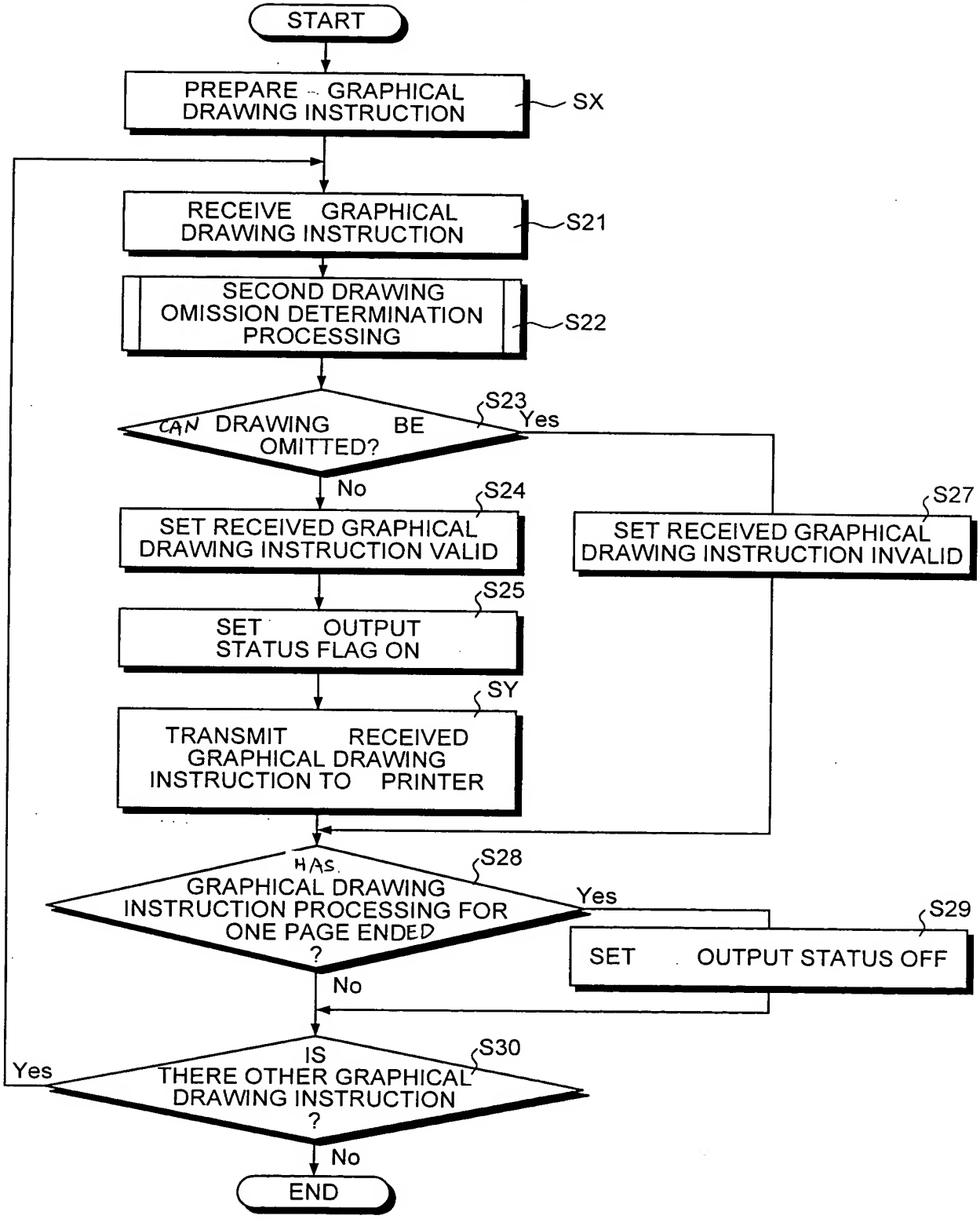

START
PREPARE GRAPHICAL DRAWING INSTRUCTION
SX
RECEIVE GRAPHICAL DRAWING INSTRUCTION
S21
SECOND DRAWING OMISSION DETERMINATION PROCESSING
S22
CAN DRAWING BE OMITTED?
S23
Yes
No
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION VALID
S24
SET RECEIVED GRAPHICAL DRAWING INSTRUCTION INVALID
S27
SET OUTPUT STATUS FLAG ON
S25
TRANSMIT RECEIVED GRAPHICAL DRAWING INSTRUCTION TO PRINTER
SY
HAS GRAPHICAL DRAWING INSTRUCTION PROCESSING FOR ONE PAGE ENDED ?
S28
Yes
No
SET OUTPUT STATUS OFF
S29
IS THERE OTHER GRAPHICAL DRAWING INSTRUCTION ?
S30
Yes
No
END

FIG.17

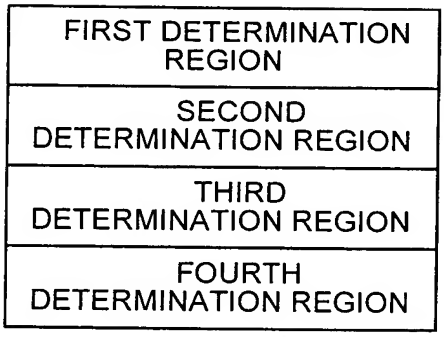


FIG.18

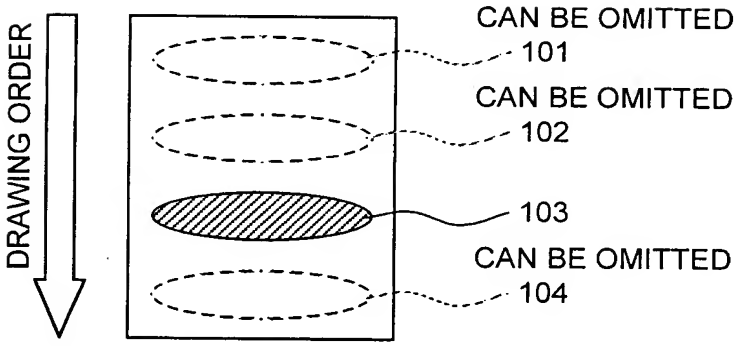


FIG.19

FIG.20

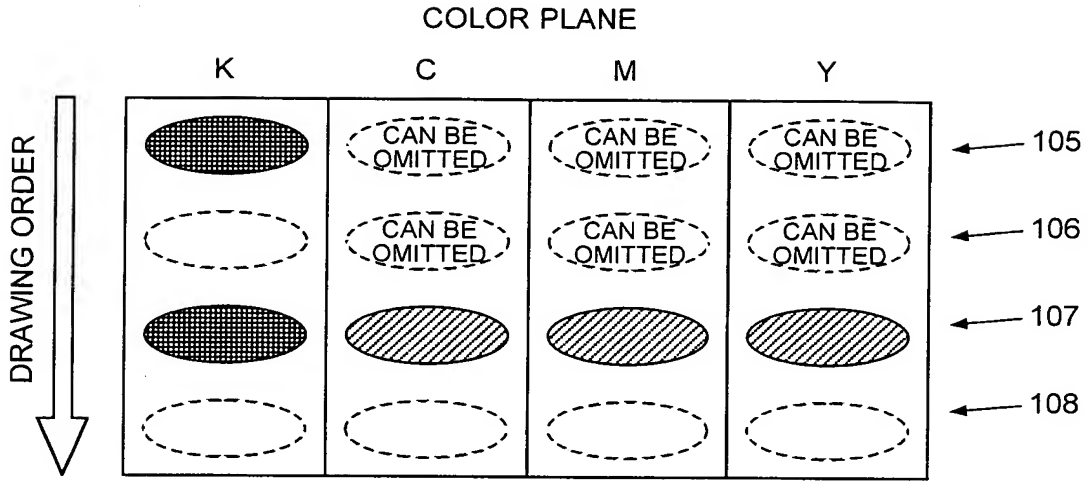

COLOR PLANE
K
C
M
Y
DRAWING ORDER
CAN BE OMITTED
105
106
107
108

FIG.21

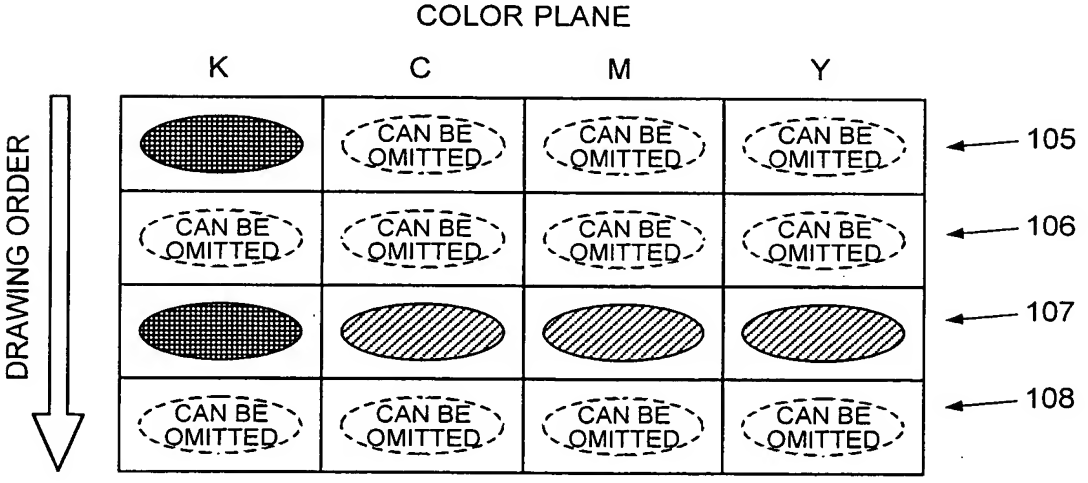

COLOR PLANE
K
C
M
Y
DRAWING ORDER
CAN BE OMITTED
105
106
107
108

FIG.22

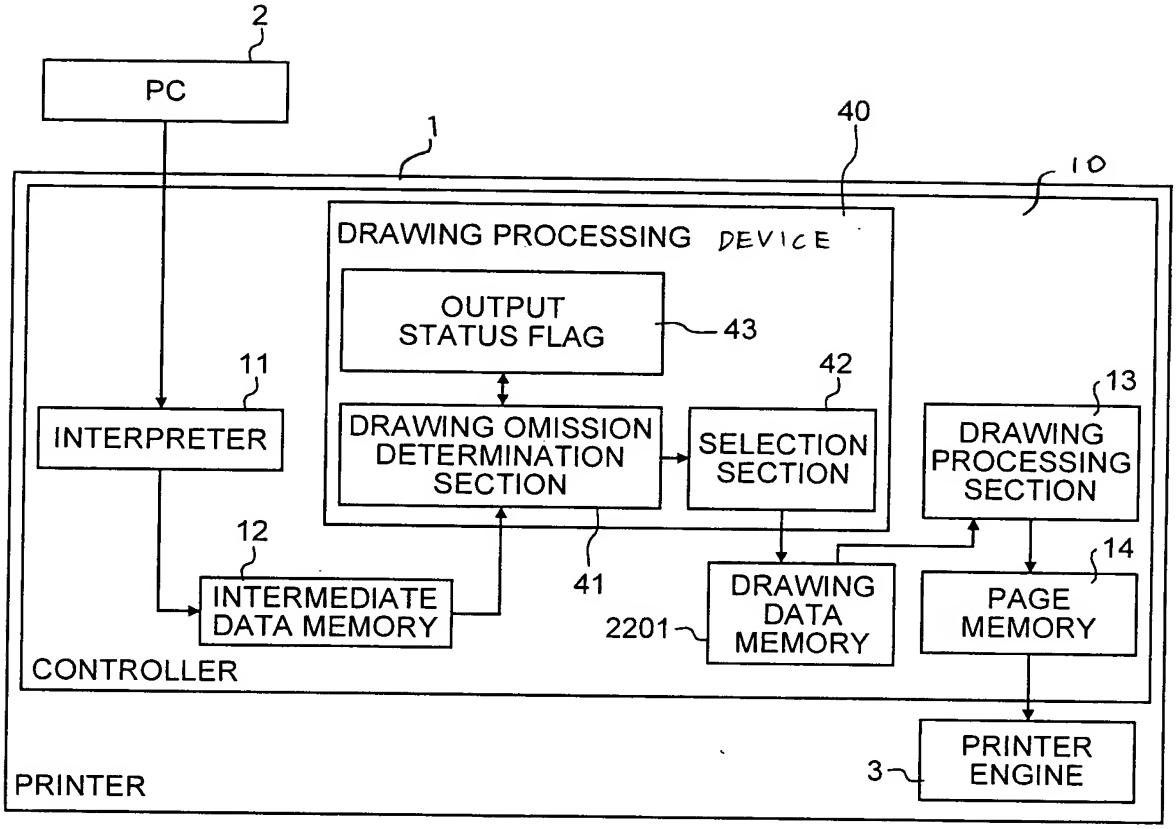


FIG.23

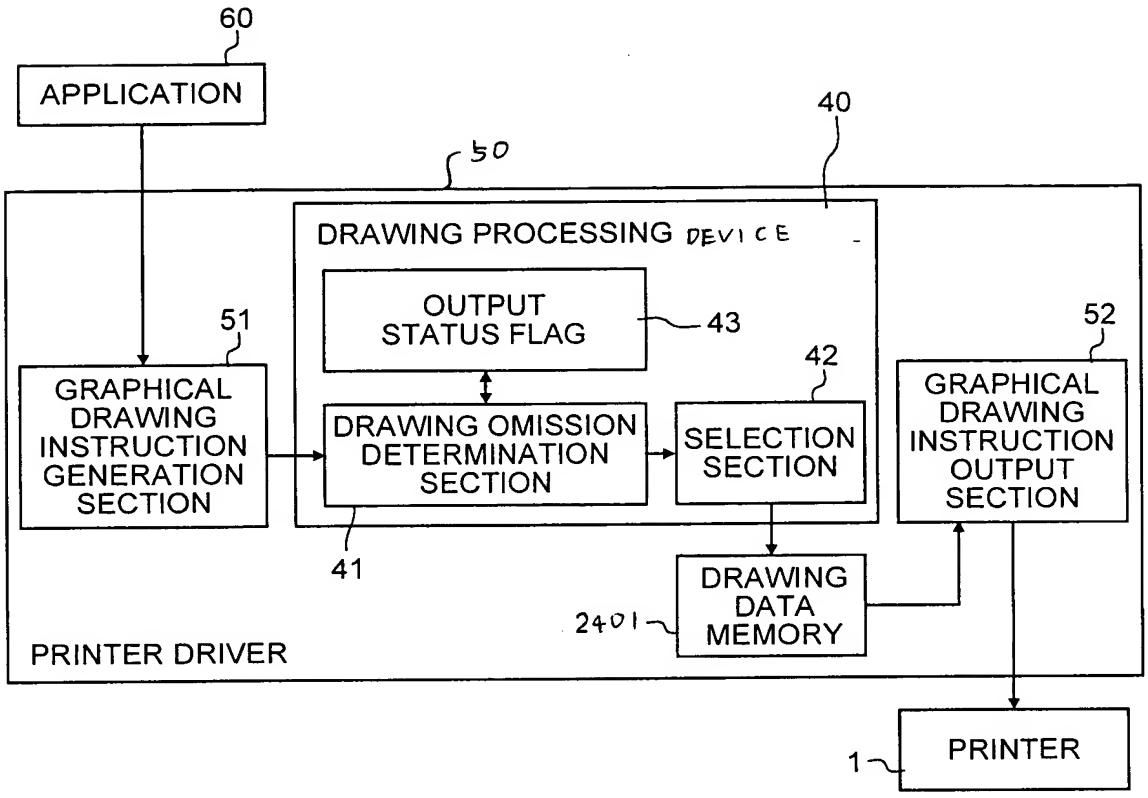
INTERMEDIATE DATA MEMORY

1	COAT RECTANGLE IN WHITE BY SET
2	COAT CHARACTER IN RED BY SET
3	COAT TRIANGLE IN WHITE BY OR
4	COAT RECTANGLE IN BLUE BY SET
	⋮

DRAWING DATA MEMORY

1	(DRAWING CAN BE OMITTED)
2	COAT CHARACTER IN RED BY SET
3	(DRAWING CAN BE OMITTED)
4	COAT RECTANGLE IN BLUE BY SET
	⋮

FIG.24


60
APPLICATION
40
50
DRAWING PROCESSING DEVICE
OUTPUT STATUS FLAG
43
51
52
42
GRAPHICAL DRAWING INSTRUCTION GENERATION SECTION
DRAWING OMISSION DETERMINATION SECTION
SELECTION SECTION
GRAPHICAL DRAWING INSTRUCTION OUTPUT SECTION
41
DRAWING DATA MEMORY
2401
PRINTER DRIVER
PRINTER
1